

Remarks

In this paper, claims 15 and 2 are amended. Claims 2-7 and 15 are pending. Reconsideration of the claims, as amended, is requested.

Claims 15 and 2-5 were rejected under 35 U.S.C. 103(a) as unpatentable over Robertson et al. (U.S. Patent No. 5,487,378) in view of Robertson et al.'s prior art / Ross et al. (U.S. Patent No. 5,152,456). Applicant disagrees.

Robertson et al. has been discussed in previous papers, and those comments carry over herein. Applicant continues to contend that Robertson et al. teaches an aerosol generator where the vibrator element (54) oscillates when an alternating voltage is applied at an appropriate frequency, and that Robertson et al. does not disclose or suggest a membrane that is oscillated by a vibration generator. Robertson et al., even more, does not disclose or suggest a signal, much less an audible signal, caused by the oscillation of the membrane. Applicant adds the following reasons for why the pending claims are not obvious and are patentable.

The deficiencies of Robertson et al. have been discussed in previous papers and herein. Even when combined with Ross et al., the pending claims are not disclosed or suggested.

For example, pending claim 15, the base claim for this pending application, recites that the "control means supplies a further control signal to the oscillation generating device, such that said oscillation generating device oscillates the membrane in an audible frequency range so as to emit an audible signal for a user" (emphasis added).

See also, paragraph [0011] of the published application (which is the paragraph bridging pages 2 and 3 of the originally filed application), which describes that "the further control signal causes the membrane 1 to oscillate at an audible frequency such that the membrane 1 emits a sound signal which is audible for the patient. . . . This is surprising not only since in order to emit an audible sound a frequency in the audible range has to be selected, but also because sufficient energy also has to be supplied to the oscillatable structure 1, 6, 7 so that sound energy can be emitted to a perceptible extent." (emphasis added).

As mentioned above, Robertson et al. provides no disclosure or suggestion of having an audible signal emitted by an oscillating membrane. The Office Action attempts to turn to Ross et al. for the suggestion of an audible signal. Applicant disagrees with this attempt.

Ross et al. chose a frequency for driving the membrane that matches the resonance frequency of the transducer, which was done in order to maximize efficiency. Column 7, lines 12-19 of Ross et al. recites that "the control circuit 6 includes a simple oscillator circuit arranged to drive the transducer 8 at a frequency typically in the range of 3 KHz to 1 MHz selected to be at resonant frequency of the transducer in order to maximize efficiency. The resonant frequency of the transducer 8 is matched to that of the disc 11 so as to achieve maximum amplitude of vibration at the membrane 13." Consequently, based on this teaching of Ross et al., one skilled in the art would choose the signal power to maximize efficiency. In contrast thereto, Ross et al. do not discuss or suggest any power or energy requirements that are necessary for generating perceptible audible sounds. In fact, they provide additional visual or audible indicators to indicate information regarding the state of the apparatus. See column 7, lines 45-49 where Ross et al. recite that "the apparatus may also optionally be provided with visual or audible indicators to provide indication of for example elapsed time since last use, warning that the remaining liquid is nearly depleted and indication that the next dispensing cycle is due." At least based on this, one skilled in the art would not turn to using Ross et al.'s oscillating membrane as an indicator of specific operating states of the nebulizer.

In addition, the pending claim 15 also recites a further second control signal (i.e., "said control means supplies a further control signal to the oscillation generating device") that causes the audible signal. See paragraph [0011] of the published application (which is the paragraph bridging pages 2 and 3 of the originally filed application), which describes that "the further control signal causes the membrane 1 to oscillate at an audible frequency . . . The emission of the sound signal can occur during the nebulisation operation of the membrane 1 without the two oscillations disturbing each other." Neither Robertson et al. nor Ross et al. describe or suggest an apparatus that applies two signals

simultaneously in the described manner. Claim 15 has been amended to clarify that these two signals are different signals and at the same time.


In summary, Applicant contends that at least for these reasons discussed above, the pending claims are not obvious over Robertson et al., Ross et al., nor their combination, and requests that the rejection be withdrawn.

SUMMARY

In consideration of the above amendments and remarks, Applicants respectfully request a Notice of Allowance. If the Examiner believes a telephone conference would advance the prosecution of this application, the Examiner is invited to telephone the undersigned at the below-listed telephone number.

Respectfully submitted,  
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By   
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